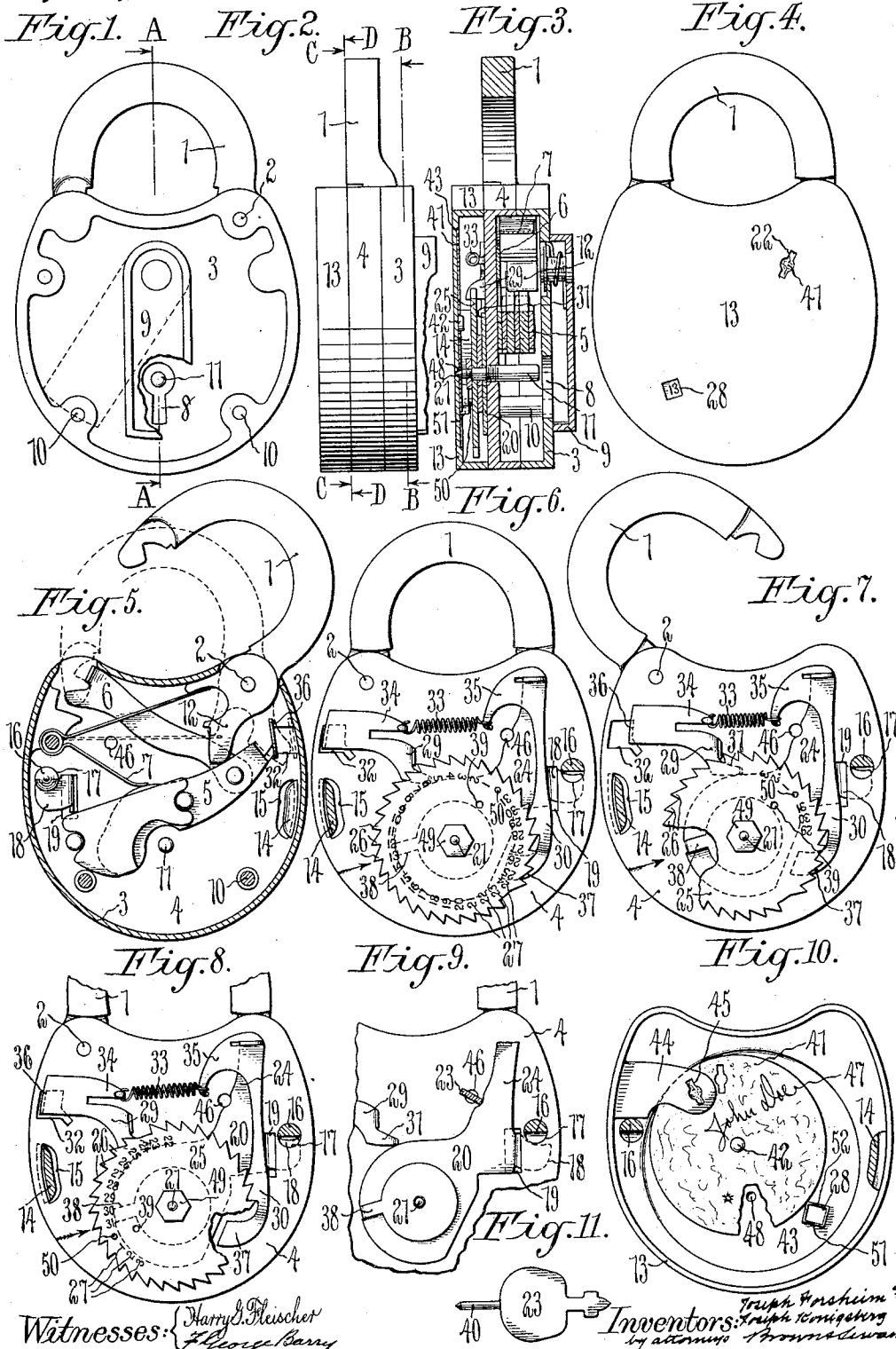


J. FORSHEIM & J. KONIGSBERG.
LOCK.

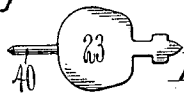
APPLICATION FILED JAN. 20, 1914.

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1,149,643.



Witnesses: Harry E. Fleischer
George Barry



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UNITED STATES PATENT OFFICE.

JOSEPH FORSHEIM, OF GREAT NECK, AND JOSEPH KONIGSBERG, OF NEW YORK, N. Y.

LOCK.

1,149,643.

Specification of Letters Patent.

Patented Aug. 10, 1915.

Application filed January 20, 1914. Serial No. 813,237.

To all whom it may concern:

Be it known that we, JOSEPH FORSHEIM and JOSEPH KONIGSBERG, citizens of the United States, and residents, respectively, of Great Neck, in the county of Nassau and State of New York, and of the borough of Manhattan, in the city and State of New York, have invented a new and useful Improvement in Locks, of which the following is a specification.

One object of our invention is to provide an indicator for showing the number of times that a lock has been released, said indicator being rendered automatically inoperable when the lock has been operated a predetermined number of times; it being necessary to manually reset the indicator before it will again be brought into its operative connection with the lock.

A further object is to provide a separate locked compartment for the indicator, said compartment requiring a different key for opening the same to gain access to the indicator for purposes of resetting the indicator.

A still further object is to provide broadly a device for recording the fact of the insertion of a key in a lock and in its more specific application to provide a device for recording the fact that a key has been inserted for gaining access to the indicator compartment; so that unauthorized access to the indicator or tampering with the lock for the indicator compartment will be automatically recorded.

This invention is shown and will be described in connection with a padlock of well known and approved form, it being understood that the invention is applicable in connection with locks of various kinds.

A practical embodiment of our invention is represented in the accompanying drawings, in which—

Figure 1 is a front view of a padlock to which our invention is applied, Fig. 2 is a side view of the same, Fig. 3 is a section from front to rear, taken in the plane of the line A—A of Fig. 1, looking in the direction of the arrows, Fig. 4 is a back view of the lock, Fig. 5 is a section taken in the plane of the line B—B of Fig. 2, looking in the direction of the arrows, the hasp being shown in full lines in its open position and in dotted lines in its closed position, Fig. 6 is a section taken in the plane of the line C—C of Fig. 2, looking in the direction of

the arrows, the parts being in the positions which they assume when the hasp is closed, Fig. 7 is a similar view with the parts in the positions which they assume when the hasp is open, Fig. 8 is a similar view showing the parts in the position which they assume when the hasp is closed and when the indicator has been moved to its inoperative position, Fig. 9 is a detail section taken in the same plane with the indicator and parts of its operating mechanism removed, a key being shown in section in position to release the casing for the indicator, Fig. 10 is a section taken in the plane of the line D—D of Fig. 2, looking in the direction of the arrows, showing the device for recording the fact that a key has been inserted for removing the indicator inclosing casing member, and Fig. 11 is a view of a type of key which is shaped to release the indicator inclosing casing member and also adapted for use in resetting the indicator.

The padlock hasp 1 is pivoted at 2 within the casing which comprises the front and back members 3 and 4 which form between them a compartment for the usual tumbler controlled locking member including the tumblers 5, hasp catch 6, and spring 7, the branches of which act upon both the hasp and the tumblers. The front casing member 3 has a key-hole 8 and a hinge keeper 9 therefor. The back member 4 is provided with the posts 10, to which the front member is riveted, and also with the pipe key pintle 11 arranged to position the key with respect to the tumblers. The hasp 1 is provided at its hinged end with a lug 12 engaged by the tumblers, which lug also controls the operation of the indicator as the hasp is opened and closed, as will hereinafter more fully appear.

A removable casing member 13, corresponding in shape to the casing members 3 and 4, is locked to the back casing member 4 of the padlock and together with the adjacent wall of the member 4 forms a compartment for inclosing the indicator and the recording device which will be described later. This casing member 13 is locked to the casing member 4, in the present instance by providing the casing member 13 with a hinge piece 14, at one side thereof, and a hook 16 at the other side thereof. The hinge piece 14 interlocks with a slot 15 in the adjacent wall of the casing member 4 and the hook 16 projects through a hole 17 in said

adjacent wall into the tumbler compartment where it is engaged and released by a lug 18 which projects through a slot 19 in said wall, from a rocking plate 20 pivoted in the indicator compartment on a pin 21 which forms a rearward extension of the pipe key pintle 11. This casing member 13 is provided with a key-hole 22 through which a key 23 may be inserted for rocking the plate 20 by engagement with an extension 24 thereof, to move the lug 18 out of its locking engagement with the hook 16 for permitting the casing member 13 to be removed for gaining access to the indicator and recording device.

The indicator comprises a ratchet wheel 25 mounted to rotate on the pin 21, the teeth of which ratchet wheel are denoted by 26. This ratchet wheel bears on its face an annular series of marks such as numerals 27 arranged in consecutive order and corresponding in number to the number of teeth 26. The casing member 13 is provided with a window 28 through which the marks 27 on the indicator wheel are exposed one at a time. The ratchet actuating pawl is denoted by 29 and the retaining pawl by 30. The actuating pawl 29 is provided with an extension 31 which rests upon the edge of the rocking plate 20 for limiting the inward movement of the said pawl. This pawl has a sliding interlocked engagement with the adjacent wall of the back member 4 through a slot 32. The retaining pawl 30 is mounted upon the extension 22 of the rocking plate 20. A coil spring 33, connecting the arm 34 of the pawl 29 with the arm 35 of the pawl 30, serves the threefold purpose of tending to hold the pawl 29 at the limit of its inward movement, the pawl 30 at the limit of its inward movement, and the rocking plate 20 at the limit of its rearward movement. The ear 36 of the actuating pawl 29 which is located within the tumbler compartment is arranged in position to be engaged by the lug 12 at the hinged end of the hasp for moving the actuating pawl against the tension of the spring 33 to the limit of its outward movement when the hasp is closed. The parts are so arranged that the movement of the actuating pawl 29 is slightly greater than the length of a tooth on the indicator wheel. An offset extension 37 of the retaining pawl 30 serves to keep the teeth of the pawl in the plane of the indicator wheel. The extension 31 of the actuating pawl 29 also serves to keep the tooth of the pawl in its proper relationship with respect to the teeth of the indicator wheel. One of the teeth 26 on the periphery of the indicator wheel is removed so that when this blank comes opposite the tooth of the actuating pawl 29 the pawl is rendered inoperative to rotate the wheel. For convenience in resetting the wheel to bring it into its operative

relationship with respect to the actuating pawl 29, the plate 20 is provided with a stop 38 and the wheel 25 is provided with a hole 39 for the insertion of the pin 40 on the key 23. For instance, in resetting the disk with the parts in the position shown in Fig. 6, with the numeral 13 opposite the arrow, the pin 40 of the key 23 will be inserted through the hole 39 and the wheel rotated until the pin 40 is arrested by the stop 38. This will bring the zero point opposite the arrow and also opposite the window 28 in the casing 13. Similarly with the wheel in the position shown in Fig. 8, the pin 40 of the key 23 may be inserted through the hole 39 and the wheel moved one tooth to bring the zero opposite the arrow and the window 28, thus moving the wheel from its inoperative to its operative position with respect to its actuating pawl 29.

We will now proceed to describe a practical embodiment of our device for recording the fact of the insertion of a key or other instrument through the key-hole 22.

A disk 41, of paper or other suitable material, is rotatively mounted upon a stud 42 projecting inwardly from the wall of the casing member 3, the position of the stud 42 and the shape of the recording disk 41 being such that the window 28 in the casing member 13 will not be covered by the disk 41. This disk 41 is preferably located in a shallow pocket 43 and a guard 44 projects over the disk opposite the key-hole 22, which guard is provided with a key-hole 45 in alinement with the key-hole 22 so that the disk is held in position to be readily punctured when a key or other instrument is inserted through the key-holes 22 and 45. A recess 46 may be provided in the adjacent wall of the casing member 4 for receiving the inner end of the key to hold the same in proper position for moving the rocking plate 20 into position to release the hook 16 of the casing member 13. This disk 41 may be privately marked, as shown at 47, so as to prevent the unwarranted substitution of another disk in place thereof. This disk 41 is held against movement by engagement with the end of the pin 21, a recess 48 being formed in the shallow pocket 43 for receiving the end of said pin 21 when the casing member 13 is locked to the casing member 4. A nut 49 has a screw threaded engagement with the pin 21 for holding the indicator wheel 25 and rocking plate 20 in position thereon.

To prevent the indicator wheel from being advanced beyond its inoperable position by the introduction of an implement through the window 28 into engagement with the face of the wheel, we provide the wheel with a pin 50 which will engage the window frame 51 of the window 28 when the indicator wheel reaches its inoperable

position. The wheel is then locked against further rotary movement until the casing member 13 is removed. After the indicator wheel has been reset and the casing member 13 locked in its position, the pin 50 may pass through a slot 52 in the window frame 51 as the lock and indicator are operated.

In operation, presupposing the parts to be in the position shown in Fig. 8, the key 23 is inserted through the key-hole 22 and the rocking plate 20 is moved into position to release the hook 16 as shown in Fig. 9. The casing member 13 may then be removed by a swinging movement. The pin 40 may then be inserted through the hole 39 and the indicator wheel 25 moved one tooth to bring the actuating pawl 29 and wheel into operative relationship. This will also bring the zero mark into position to be exposed through the window 28. The recording disk 41 is then moved to bring an unperforated surface opposite the key-hole 22 or a new disk may be inserted if desired. The casing member 13 is then locked in its position. Thereafter every time that the padlock is released up to a predetermined number of times, in the present instance thirty-one times, the indicator wheel is moved by the actuating pawl 29 to visually indicate through the window 28 the number of times which the padlock has been opened. At the same time, access to the indicator wheel and its actuating parts can only be obtained by removing the casing member 13 and this can only be removed by insertion of a proper key. Should a key or other instrument be inserted through the key-hole 22, the disk 41 will automatically record the fact. The coincidence of the actuating pawl 29 with the blank portion of the toothed periphery of the wheel 25 and the engagement of the pin 50 with the window frame 51, prevents the indicator wheel from being moved past the numeral 31 without unlocking and removing the casing member 13 and manually resetting the indicator wheel with respect to its actuating pawl.

It is obvious that the casing member 13 may be either partly or entirely removed from the casing member 4 when unlocked for gaining access to the indicator and protective device.

The parts relating to the indicator lock shown, and described but not claimed herein, form the subject-matter of a divisional application filed by us May 8th, 1914, Serial No. 837239.

It is evident that various changes may be resorted to in the construction, form and arrangement of the several parts, it being understood that we have illustrated our invention in connection with a padlock of the character illustrated herein purely for the purposes of giving a clear understanding of the operation of our invention, and it is therefore obvious that we do not wish to limit ourselves to the construction herein shown and described, but

What we claim is:—

1. In an indicator lock, a resettable indicator in combination with a lock-controlled means associated with the indicator lock for gaining access to the indicator to reset it and a protective recording device for recording the release of said lock-controlled means.

2. In a lock provided with a resettable indicator, a separately locked removable casing member associated with the lock casing and a protective device therein in position to be directly engaged by a lock opening implement for recording the act of opening the casing for resetting the indicator.

3. In a lock provided with a resettable indicator, a separately locked removable casing member associated with the lock casing, a protective sheet therein arranged in position to be directly punctured by a lock opening implement for recording the act of opening the casing for resetting the indicator, and means for holding the sheet against movement from without the removable casing member to prevent the hiding of the puncture.

In testimony, that we claim the foregoing as our invention, we have signed our names in presence of two witnesses, this eighteenth day of December, 1913.

JOSEPH FORSHEIM.
JOSEPH KONIGSBERG.

Witnesses:

F. GEORGE BARRY,
C. S. SUNDGREN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."